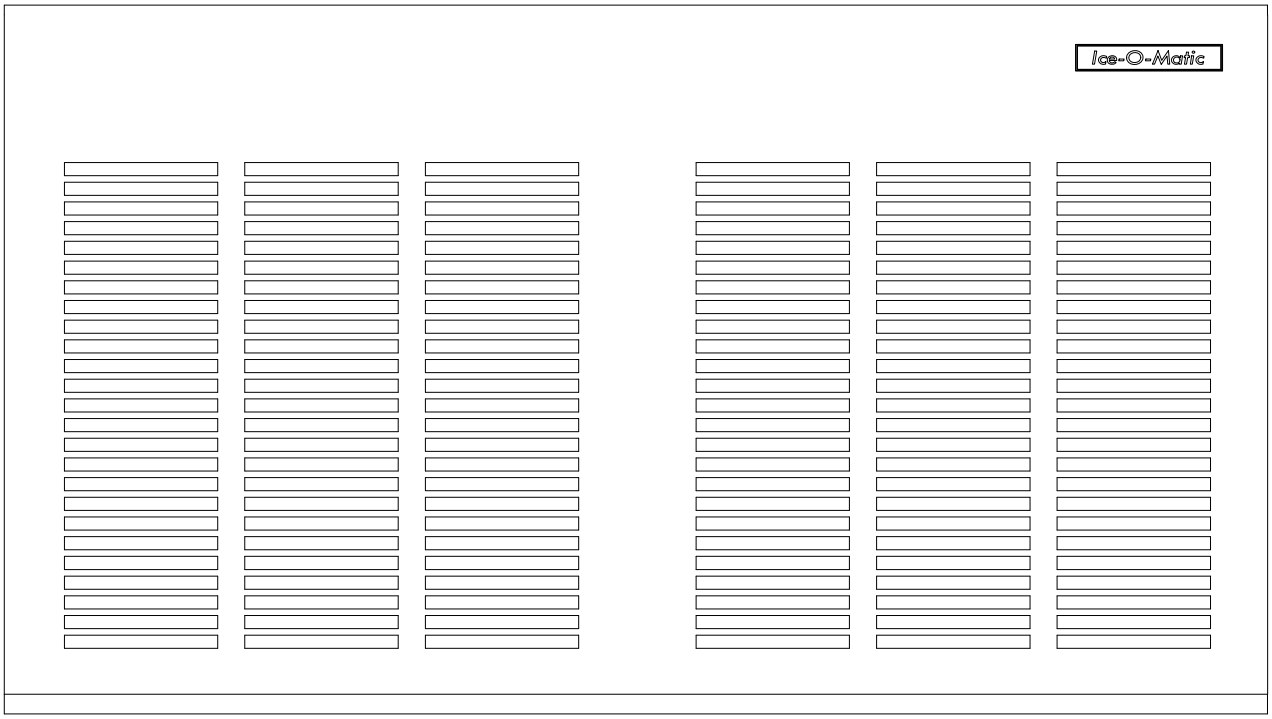
Ice-O-Matic®

SERVICE AND INSTALLATION MANUAL
MFI 2406LS Series



Ice-O-Matic
11100 East 45th Ave
Denver, Colorado 80239
Part Number 9081358-02 17-3168-02

Date 10/08

TO THE OWNER OR USER:

The service manual you are reading is intended to provide you, and the maintenance or service technician, with the information needed to install, start up, clean, maintain and service this ice system.

The is the freezer portion of a commercial ice machine. It is designed to be connected to the condensing section of a refrigeration system, specifically a supermarket system.

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This manual was printed on recycled paper, keep it for future reference.

Note the Warning symbol where it appears. It marks a potential hazard.

⚠WARNING

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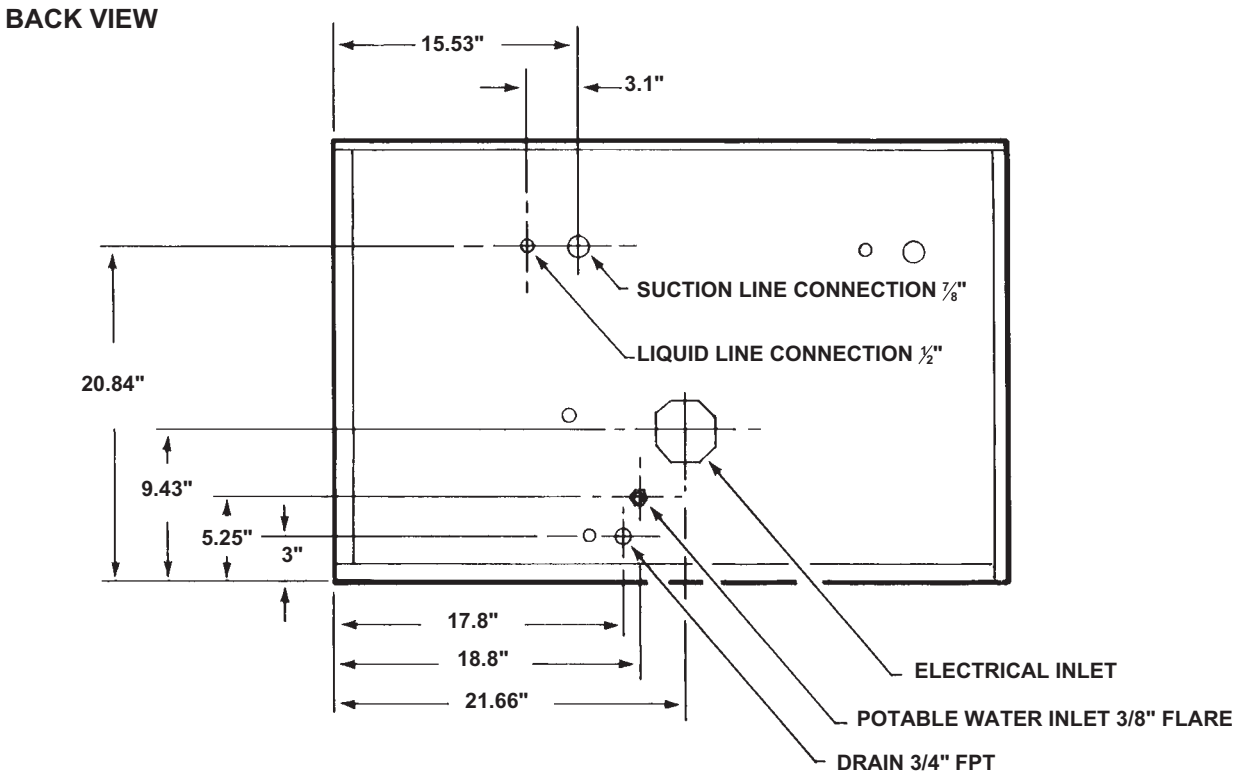
FOR THE INSTALLER: Specifications



The machine is designed to fit a B100 Ice-O-Matic storage bin with a KBT-26.

Installation Limitations: The machine is designed for indoor installations only.

	Minimum	Maximum
Air Temp	50°F	100°F
Water Temp	40°F	100°F
Voltage	198 VAC	253 VAC
Water Pressure	20 psi	80 psi

RO Water Limitation: Water conductivity must be no less than 35 microSiemens/cm.

Ice-O-Matic ice machines are designed and manufactured with the highest regard for safety and performance. They meet or exceed the standards of U.L., N.S.F., and C.U.L.

Ice-O-Matic assumes no liability or responsibility of any kind for products manufactured by Ice-O-Matic that have been altered in any way, including the use of any parts and/or other components not specifically approved by Ice-O-matic.

Ice-O-Matic reserves the right to make design changes and/or improvements at any time. Specifications and designs are subject to change without notice.

SPECIFICATIONS:

Model	Cabinet Size	System Refrigerant	BTUH required*	Voltage	Ice Type
MFI2406RL	42"w x 27"h x 24"d	R-404A	12,000	208-230/60/1	Flake

*Used to determine needed condensing unit capacity. Not an AC load

FOR THE INSTALLER

Select the Location:

The unit can only be installed indoors within the limitations described on page 2.

The ice machine will have to be connected to the building's R-404A refrigeration system, check to be sure that the system has AT LEAST enough extra capacity to handle the BTUs (from table on page 2) per hour @ 110^0F. liquid line temperature (assume a 0^0F. evaporator temperature).

Storage Bin:

Ice-O-Matic's B100 will be the presumed bin of choice. Install the legs and place the bin into position.

A KBT26 bin adapter kit is required, follow installation instructions included in the kit.

The ice machine is heavy, so the use of a mechanical lift is recommended for lifting the machine high enough to install on top of the bin.

Level the assembly by turning the leg levelers in or out.

Locate the Nameplate: The nameplate is located on the back panel of the machine, and contains the electrical characteristics particular to the unit being installed.

Refrigeration Installation:

The skills of a refrigeration technician are required to connect the ice machine to the building's refrigeration system.

Notes:

- Suction Line and Liquid Line Stubs are at the back of the cabinet.
- R-404A models: 1.5 ounces of R-404A refrigerant is in the system as a holding charge.
- Be sure there is enough BTU capacity.
- Be sure the liquid connection is NOT in series with another liquid line valve.
- Local Codes must be observed.
- A P-trap should be installed where there will be more than 10' of vertical rise in the suction line.

CONFORM TO ALL APPLICABLE CODES

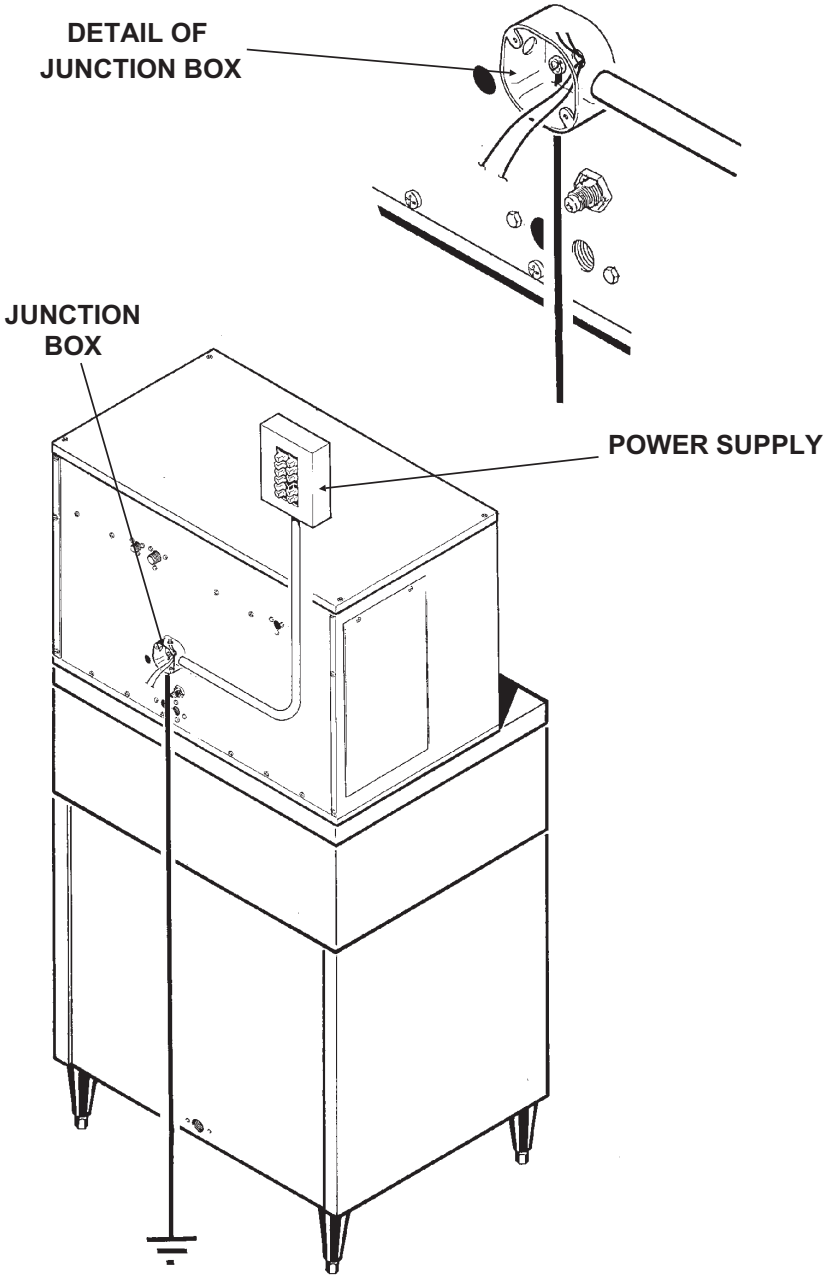
Electrical Connections:

Locate the nameplate for the current requirements, and then determine the wire size and type per the National Electric Code. The machine requires a solid chassis to earth ground wire. Refer to the wiring diagram. The ice machine should be connected to it's own electrical circuit, and be individually fused.

Voltage, when the unit is under full load, must remain within the limitations listed on page 2.

LOW VOLTAGE CAN CAUSE EQUIPMENT MALFUNCTION AND/OR DAMAGE

All external wiring should conform to the National, State, and local electrical codes. Usually the services of a licensed electrician will be required.



FOR THE PLUMBER

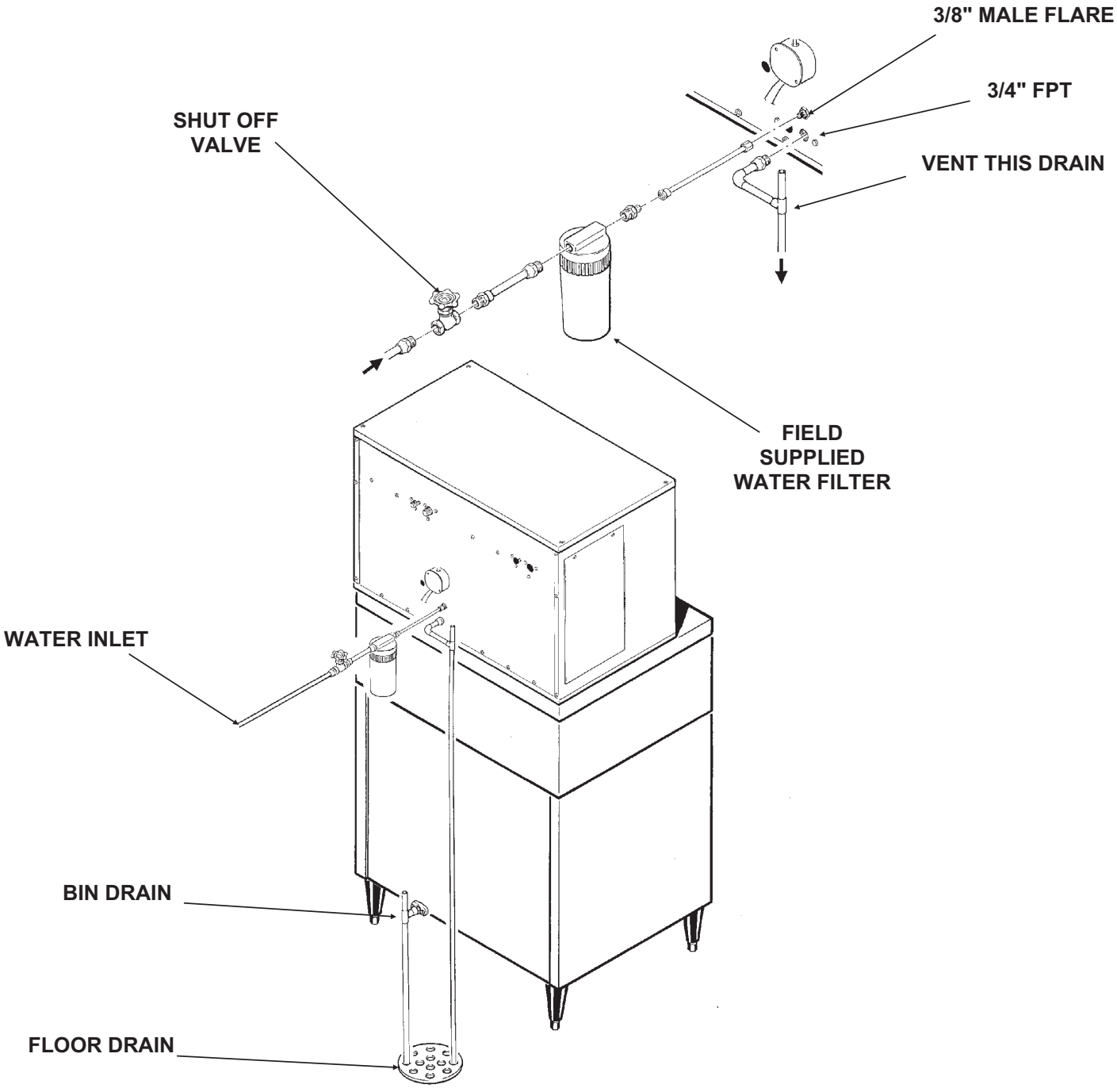
CONFORM TO ALL APPLICABLE CODES

Water Supply:

The recommended water supply line is 3/8" O.D. copper tubing, with a minimum operation pressure of 20 PSIG, and a maximum of 80 PSIG. Connect to cold water using the male flare connection at the back of the machine. Install a shut off valve in an accessible space between the ice maker and the water supply.

Drain System:

All drains are of the gravity type, and must have a minimum of 1/4" fall per foot of horizontal run. The drains must be installed to conform to local plumbing codes. The use of a vent at the machine and at the bin will allow the system to drain properly. Use only rigid tubing for drains; insulation of the bin drain is recommended.



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FOR THE INSTALLER: Final Check List

1. Is the unit installed where the air and water temperatures are within and will remain within the limitations for the unit?

2. Is there 6" clearance at the rear of the machine for utility connections?

3. Has the water supply line be checked for pressures between 20 and 80?

4. Has the unit been leveled?

5. Has the shipping material been removed from inside the cabinet?

6. Have the electrical connections been made?

7. Have the drains been installed and checked for leaks?

8. Has the refrigeration supply been installed and checked for leaks?

9. Has the bin and cabinet been wiped clean or sanitized?

10. Has the warranty registration card been properly filled out and mailed to Ice-O-Matic?

11. Has the owner been given the service manual and been instructed on how to maintain the ice maker?

13. Has the owner been given the name and telephone number of the local Ice-O-Matic service agency?

INITIAL START UP

1. Remove the top and front panels.

2. Open the water valve, and observe that the two float reservoirs fill up with water and shut off.

3. Switch on the electrical power.

4. Open the hand valves (in the liquid lines).

5. Open the ball valves (in the suction lines).

6. Switch on one master (mode) switch, and observe:

- That liquid line valve opens
- The gearmotor runs
- Within a short time, that side of the machine begins to make ice.
- Water flows from the water reservoir, and the float drops, letting in more water.

7. Switch on the other master (mode) switch, observe that:

- The liquid line valve opens
- The gearmotor runs
- Within a short time, that side of the machine begins to make ice.
- Water flows from the water reservoir, and the float drops, letting in more water.

8. With both sides operating, the sight glass should remain full, and the low side pressure will be about 36 PSIG, + or - 2

Gearmotor amp draw should not exceed the nameplate rating.

9. Check the system very carefully for any refrigerant leaks, repair as needed.

Liquid line valve(s)

These valves operate to turn the ice making process on and off.

When the ice level drops in the ice chute, the ice level sensor will cause the circuit board to close the liquid line relay, which energizes the liquid line valve for that side of the system. The liquid line valve opens, and liquid refrigerant flows to the thermostatic expansion valve.

Thermostatic Expansion Valve

The metering device of each system, the valve(s) sense the temperature of the suction line and vary the amount of liquid refrigerant that passes through the valve into the evaporator, thus maintaining a constant level of refrigeration. TXV's are factory set. Do not adjust unnecessarily.

DO NOT ADJUST THE TXV UNTIL THE EPR HAS BEEN SET.

The **superheat setting is 4-8^{0}F**. Measure the temperature of the evaporator outlet at the TXV bulb, and check the low side pressure at the EPR valve. Convert the pressure to temperature (using a temperature pressure chart) and subtract the amount from the outlet temperature. The result is the superheat. Use an electronic thermometer.

EPR: Evaporator Pressure Regulator Valve

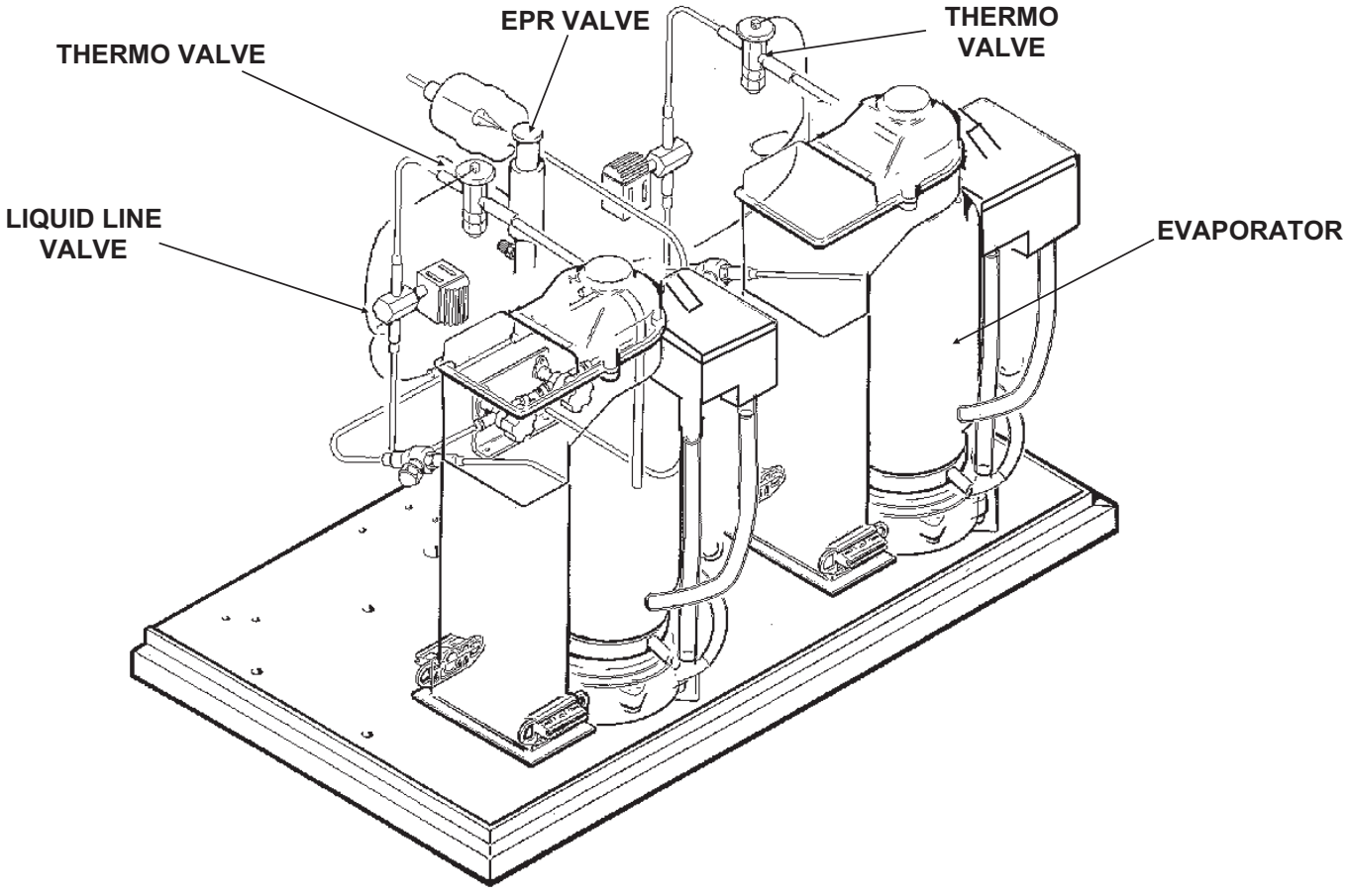
This valve maintains a constant pressure on its inlet (evaporators) side regardless of the pressure on the outlet (suction) side. The EPR is factory set, adjust only if needed. After adjusting, re-check TXV superheat.

EPR Settings:

- R-404A models: 36 PSIG

Evaporators:

Where the water is frozen into ice crystals. As the water cools, it begins to turn into ice, and the slowly turning auger lifts the ice, as it is being made, and forces it up and out of the "breaker" or spout where the extra water is compressed out of the ice. The ice then drops through the chute, into the storage bin.



COMPONENT DESCRIPTION: Evaporator

Evaporator: A refrigerated vertical tube filled water and containing a water seal and auger.

Auger: A solid stainless steel double spiral auger, it pushes the ice crystals up to the top of the evaporator.

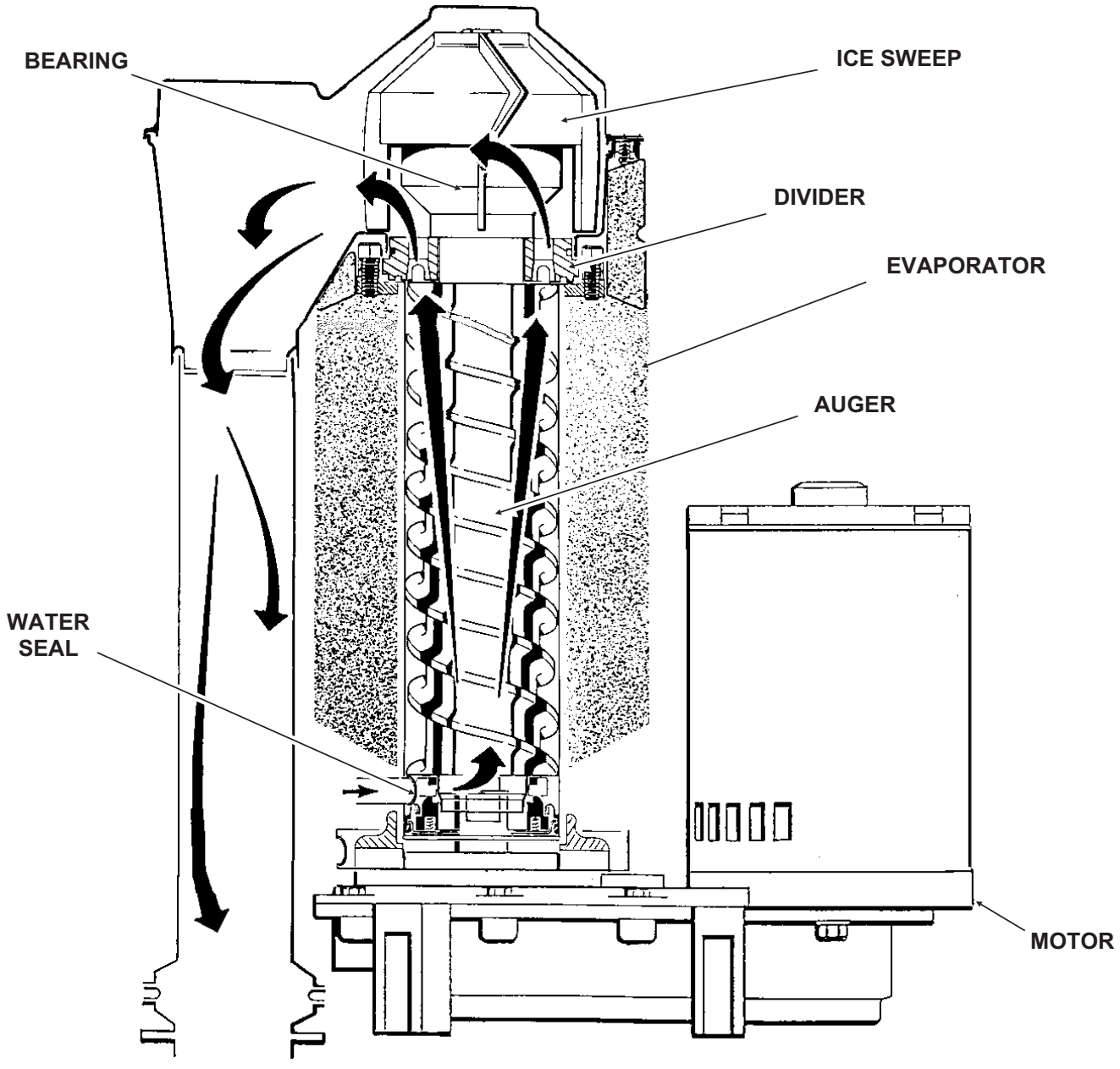
Water Seal: A two part “face” seal, the top half rotating with the auger, the bottom half stationary, the sealing action being where the two seal “faces” meet.

Ice Sweep: A plastic cap with “fingers”. It revolves with the auger to “sweep” the ice into the ice chute.

Divider: Where the ice is compressed and much of the extra water is squeezed out of it before it is discharged into the bin.

Motor: A split phase motor that drives the gear reducer.

Bearing: As the ice is pushed up the evaporator, the auger is thrust down, and pressure from the auger thrust is taken up by this bearing.



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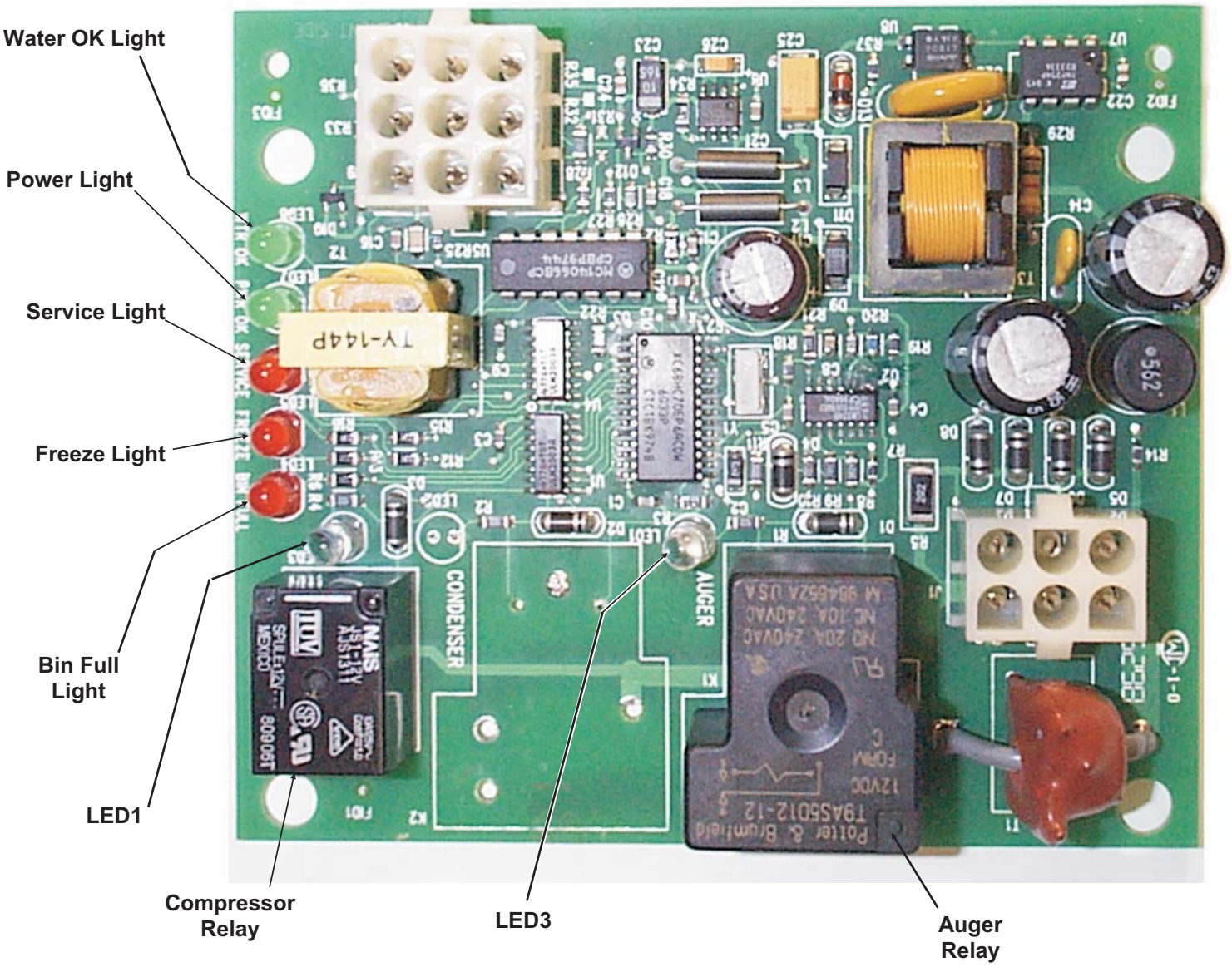
CONTROL BOX: Components

Circuit Board: Controlling the ice machine using input from ice and water sensors. The board switches loads on and off through relays. The relays are for the gear motor (with a built in time delay to clear the evaporator of ice when the unit turns off) and for the liquid line valve. See photo below.

On/Off (Mode) Switch: Manual control for that side of the machine.

Control Board



ELECTRICAL SEQUENCE

There are 7 indicator lights on the control board:

- **WTR-OK** (Water OK)**.** *Green.* **Normal = Glowing. Glows when there is water in the reservoir.**
- **PWR-OK** (Power OK). *Green.* **Normal = Glowing. Glows when the control board has power** and is functional.
- **Service.** *Red.* Normally Off.
- **Freeze.** *Red.* Normally glowing when making ice.
- **Bin Full.** *Red.* Normally Off when making ice.
- **LED1.** *White.* Located next to the board's Compressor Relay (used to power the liquid line valve). Normally Glowing when making ice.
- **LED3.** *White.* Located next to the board's Auger Motor Relay. Normally Glowing when making ice.

If the machine is switched off at the mode switch, but is otherwise ready to go, switching the mode switch to ON does the following:

- The PWR-OK light glows.
- If there is water in the reservoir the WTR-OK light glows.
- After 10 seconds the Freeze, LED1 and LED3 lights glow and the machine starts up.

Start Up:

- The compressor relay and auger motor relay become energized, connecting power to the windings of the auger motor and liquid line valve coil.
- The liquid line valve opens, refrigerant flows to the expansion valve and ice making begins.
- As ice is made it passes between the ice level sensors but because it is not a continuous stream it only interrupts the sensor's infrared beam momentarily. The bin full light remains off and the machine stays on until ice builds up in the bin and blocks the path between the sensors for 6 seconds or longer. When that occurs the bin full light glows and the machine shuts down.

Shut Down:

- The compressor relay opens, LED1 goes out.
- The liquid line valve closes.
- The refrigerant flow stops.
- The auger motor stays on for 1 more minute, clearing out ice in the evaporator, and then
- The auger motor relay opens, LED3 goes out and the auger motor stops.

The liquid line valve will not re-open until 2 minutes or more have passed after the last shut down.

If the path between the ice level sensors remains clear for more than 10 seconds the ice machine will restart.

Control Board Protection Devices

- When the water level in the reservoir falls below the water level sensor's tip, the WTR-OK light goes out and the machine shuts down. When water refills the reservoir the WTR-OK light glows and the machine starts up again.
- If the auger drive motor current becomes excessive the compressor and auger drive motor will be switched Off and the Service light will blink. The control board will restart the auger drive motor in 4 minutes. If during the first 60 seconds after restart the auger motor current stays within limits, the liquid line valve is reopened and the machine returns to normal operation. If the auger motor's current is excessive within 60 seconds after the restart, the process will be repeated once more. If during that try the current is still excessive the machine shuts down and must be manually reset. The service light will then be glowing continuously.

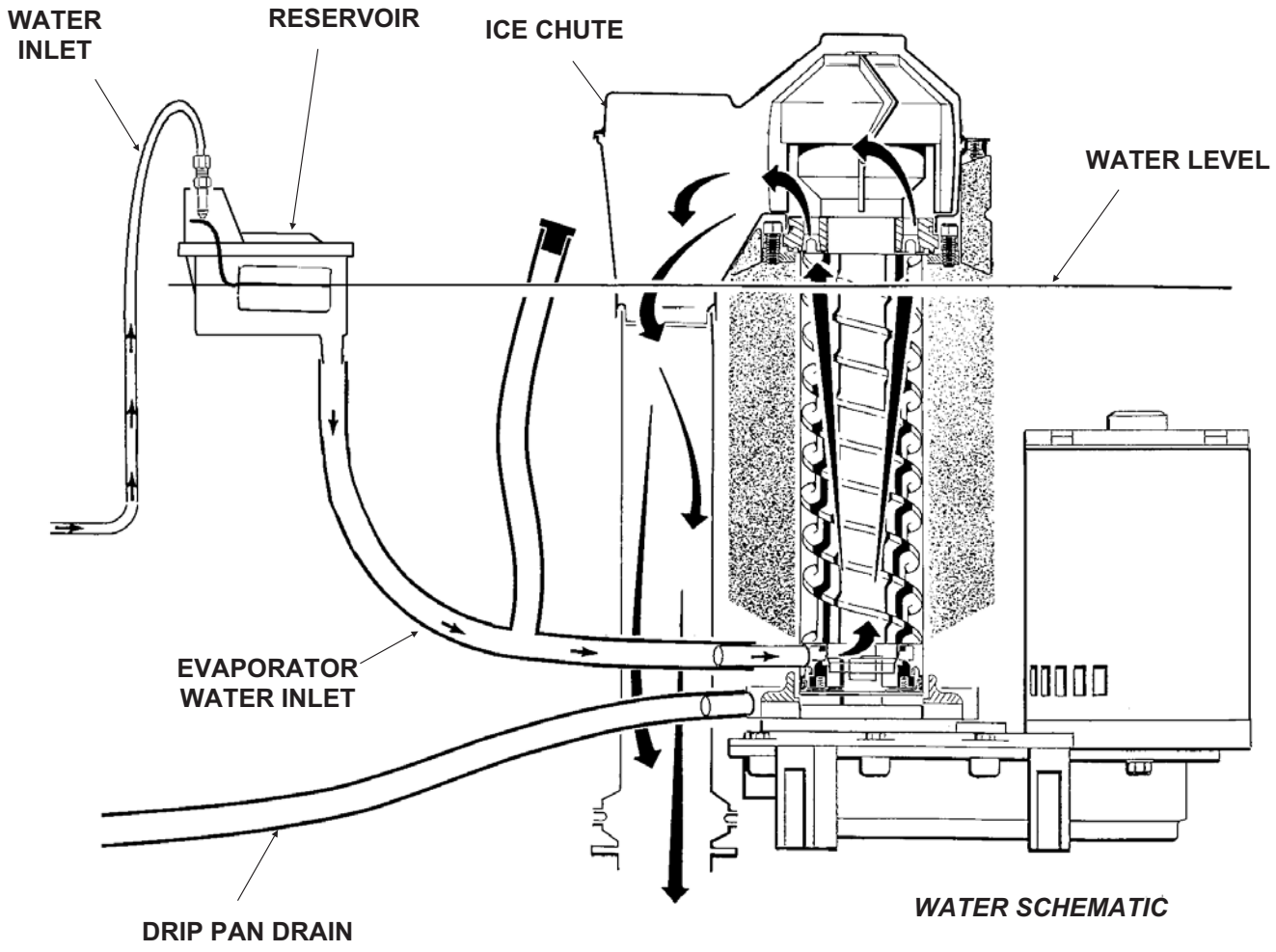
To Reset: Disconnect and reconnect electrical power to the unit.

The **mode (on - off)** switch is the manual control for the complete machine, but it is not a service disconnect.

Water

Water enters the machine through the 3/8" male flare at the rear of the cabinet, goes to the water reservoir which it enters through the float valve. The water then goes out the bottom of the reservoir tank to the bottom of the evaporator.

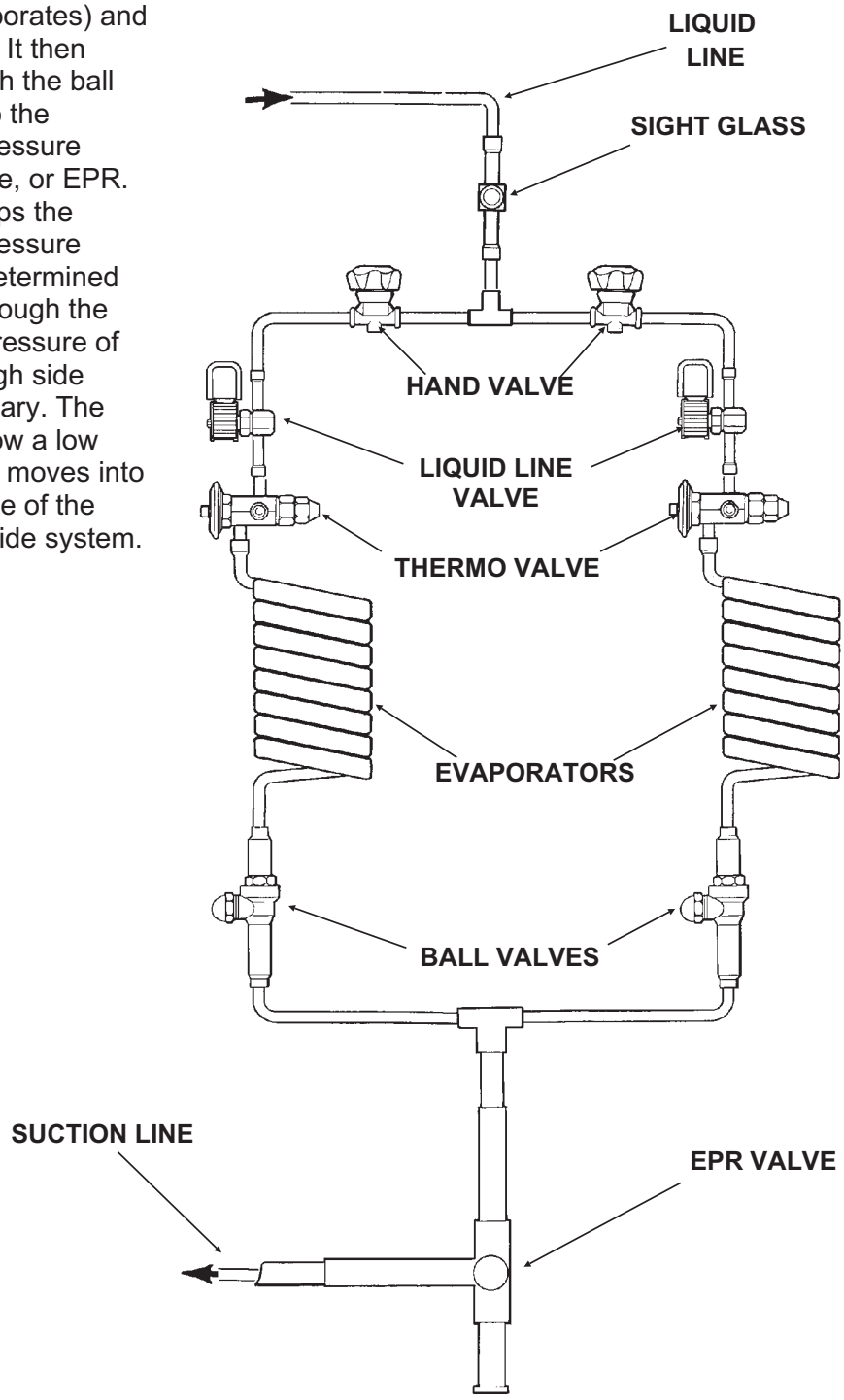
Reservoir overflow or evaporator condensation is routed to the drain.



WATER SCHEMATIC

OPERATION: Refrigeration

The remote high side supplies high pressure liquid refrigerant to the liquid line connection on the ice machine. After the sight glass, there are two separate liquid lines, each leading to a liquid line valve. When the individual ice level sensor causes the circuit board to energize the liquid line valve, the valve opens, allowing the liquid refrigerant to enter that expansion valve. The thermostatic expansion valve meters the liquid refrigerant into the evaporator, where it boils off (evaporates) and absorbs heat. It then moves through the ball valve and into the evaporator pressure regulator valve, or EPR. The EPR keeps the evaporator pressure above a predetermined point, even though the suction line pressure of the remote high side system may vary. The refrigerant, now a low pressure gas, moves into the suction line of the remote high side system.



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CLEANING and SANITATION

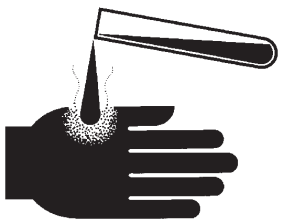
An Ice-O-Matic ice system represents a sizable investment of time and money in any company's business. In order to receive the best return for that investment, it MUST receive periodic maintenance.

It is the USER'S RESPONSIBILITY to see that the unit is properly maintained. It is always preferable, and less costly in the long run, to avoid possible down time by keeping it clean; adjusting it as needed; and by replacing worn parts before they can cause failure. The following is a list of recommended maintenance that will help keep the machine running with a minimum of problems.

Maintenance and Cleaning should be scheduled at a minimum of twice per year.

ICEMAKING SYSTEM: In place cleaning

1. Check and clean any water treatment devices, if any are installed.
2. Pull out and remove the front panel.
3. Move the ON-OFF switch to OFF.
4. Remove all the ice from the storage bin.
5. Remove the cover to the water reservoir and block the float up.
6. Drain the water reservoir and freezer assembly using the drain tube attached to the freezer water inlet. Return the drain tube to its normal upright position and replace the end cap.
7. Prepare the cleaning solution: Mix eight ounces of ice machine cleaner with three quarts of hot water. The water should be between 90-115 degrees F.

⚠WARNING	**Ice Machine Cleaner contains acids. These compounds may cause burns.**
	If swallowed, DO NOT induce vomiting. Give large amounts of water or milk. Call Physician immediately. In case of external contact, flush with water. Keep out of the reach of children.

8. Slowly pour the cleaning solution into the water reservoir until it is full. Wait 15 minutes, then switch the master switch to ON.
9. As the ice maker begins to use water from the reservoir, continue to add more cleaning solution to maintain a full reservoir.
10. After all of the cleaning solution has been added to the reservoir, and the reservoir is nearly empty, switch the master switch to OFF.
11. After draining the reservoir, as in step 6, wash and rinse the water reservoir.
12. Go thru steps 13-19 to sanitize the ice machine water system.
13. Mix two gallons of sanitizer solution. Use an approved sanitizer.

A possible sanitizer solution may be obtained by mixing two gallons of warm (90-115^{o}F.) potable water with 1 ounce of household bleach.

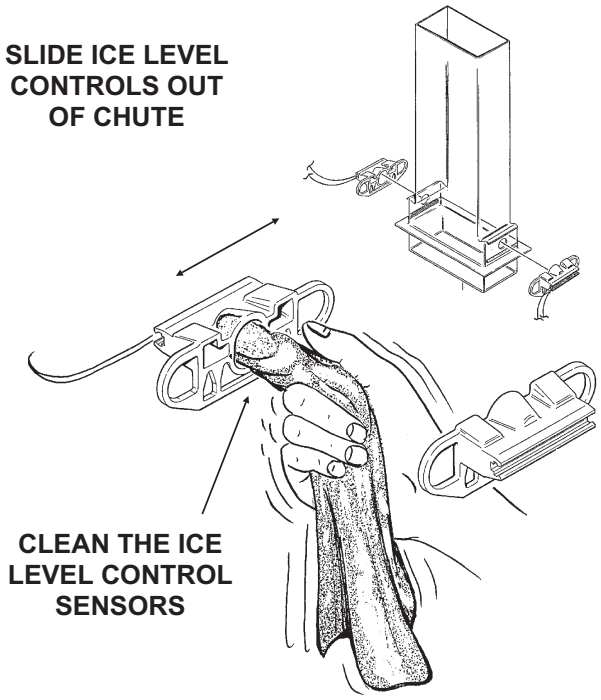
14. Slowly pout the sanitizer solution into the water reservoir until the float rises, then switch the master switch ON.
15. As the ice machine uses water from the reservoir, continue to pour the sanitizer solution into the reservoir.
16. After ½ of the sanitizer solution has been added to the reservoir, and the reservoir is nearly empty, switch the master switch OFF.
17. Drain the reservoir and thoroughly wash the interior of the reservoir and cover with sanitizer solution. Be sure the drain hose is upright and capped.
18. Remove the block from the float in the water reservoir.
19. Switch the master switch to ON
20. Continue ice making for at least 15 minutes, to flush out any cleaning solution.

DO NOT USE any ice produced from the cleaning solution. Be sure no ice remains in the bin.

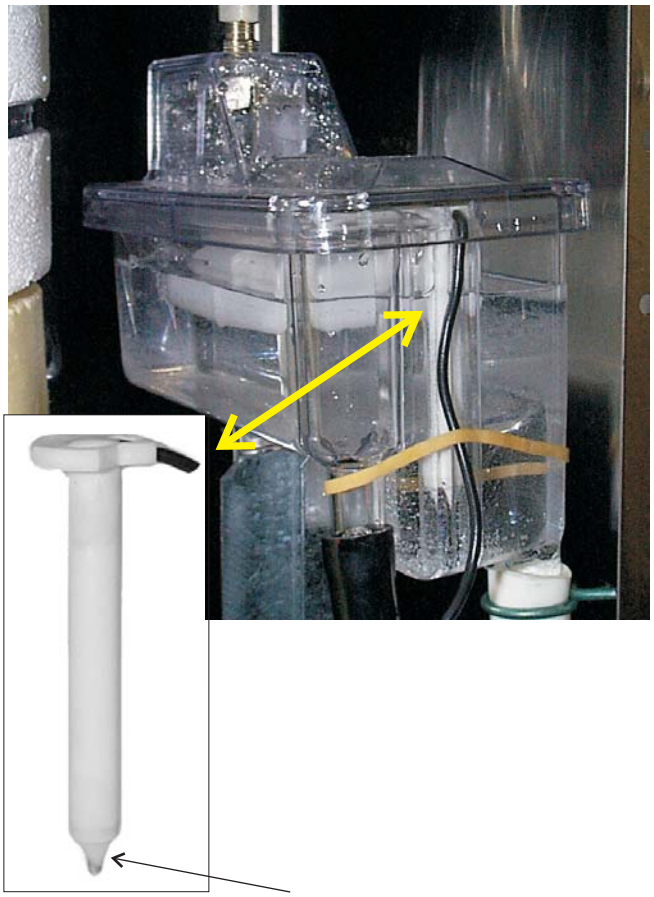
21. Remove all ice from the storage bin.
22. Add warm water to the ice storage bin and thoroughly wash and rinse all surfaces within the bin.
23. Sanitize the bin interior by washing the interior of the bin with the balance of the sanitizer solution.
24. Switch the master switch ON.

SENSOR MAINTENANCE

1. The bin control uses devices that sense light, therefore they must be kept clean enough so that they can “see”. At least twice a year, remove the bin control sensors from the base of the ice chute, and wipe the inside clean, as illustrated.



2. The ice machine senses water level by a probe located in the water reservoir. At least twice a year, the probe should be removed from the reservoir, and the tip wiped clean of mineral build-up.



Clean the Probe's Tip with ice machine cleaner and a clean, soft cloth.

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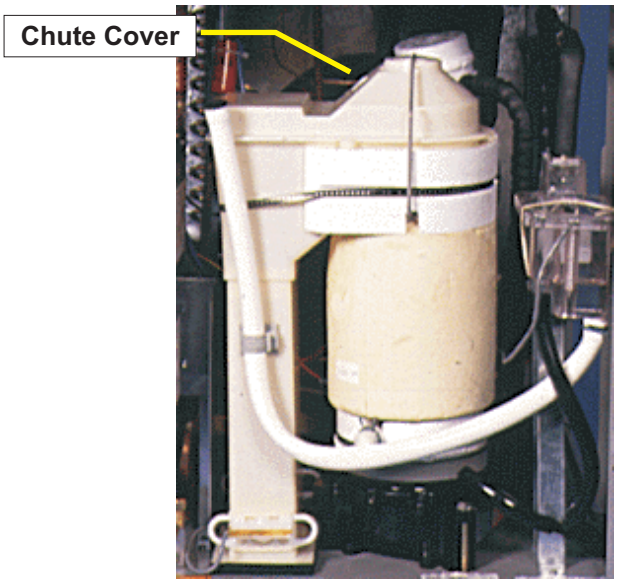
BEARING MAINTENANCE

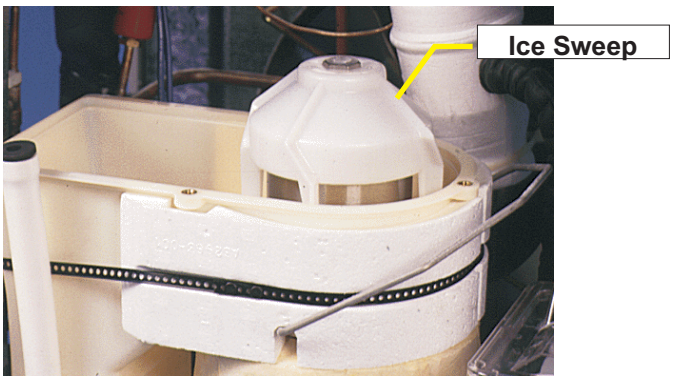
The top bearing in the breaker should also be checked at least **two times per year**.

Check the breaker bearing by:

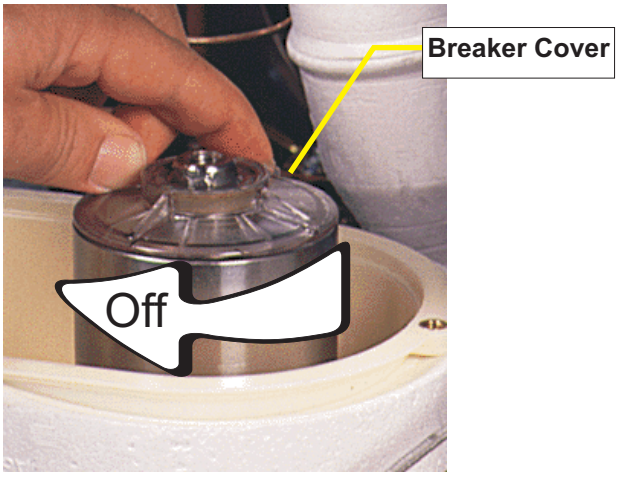
- removing the ice chute cover



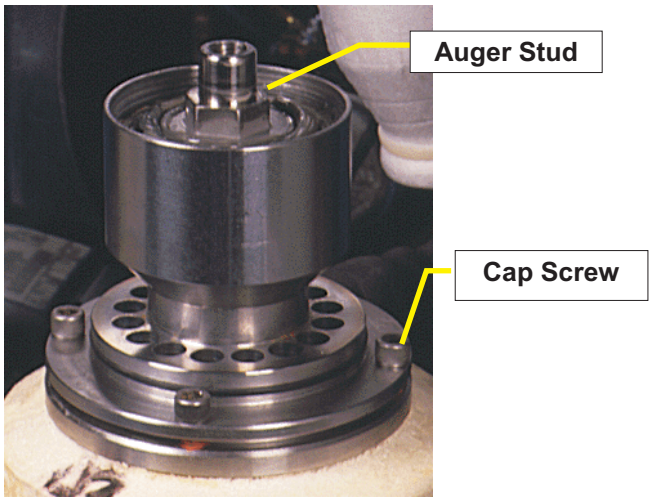
- unscrewing the ice sweep



- removing the water shed and the breaker cover (left hand thread)



- unscrewing the auger stud



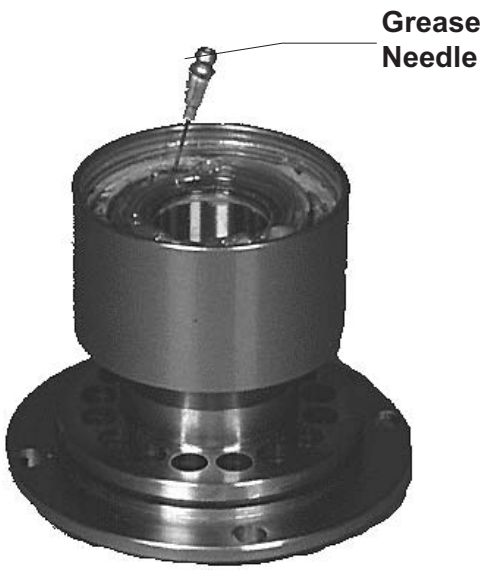
Inspect the bearing. There should be plenty of grease in sight. If grease is needed the bearing and breaker should be removed to check the action of the bearing. It should rotate smoothly.

To remove the breaker take out all four allen head cap screws and pull the breaker off the auger and evaporator.

If the bearing only needs grease, inject grease into the bearingusing a grease needle. Be sure to inject grease evenly and thoroughly.

See Removal and Replacement section to replace bearing or seals.

Reverse to reassemble.

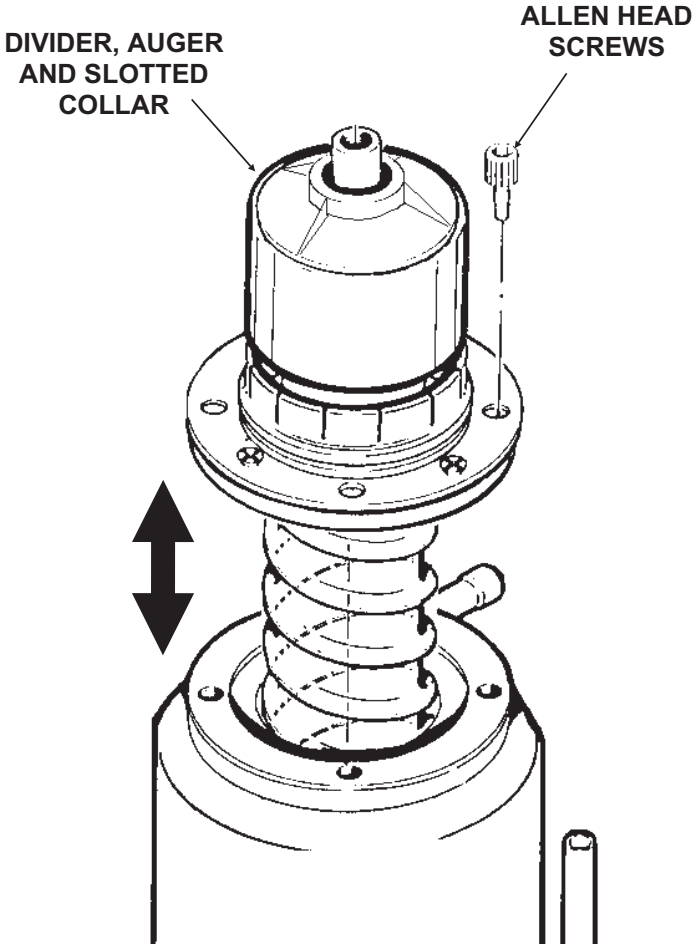


AUGER MAINTENANCE

In some installations the water supply to the ice maker will be so concentrated with dissolved minerals, (such as calcium carbonate) that as ice is made, the evaporator and auger become coated with those minerals, requiring a more frequent cleaning than twice per year. If in doubt about the condition of the evaporator and auger, the auger can be removed so the parts can be inspected.

Note: Water filters can filter out suspended solids, but not dissolved solids. “Soft” water may not be the complete answer. Check with a water treatment specialist regarding water treatment.

Note:
Flaker Components Shown, Nugget Components are Similar



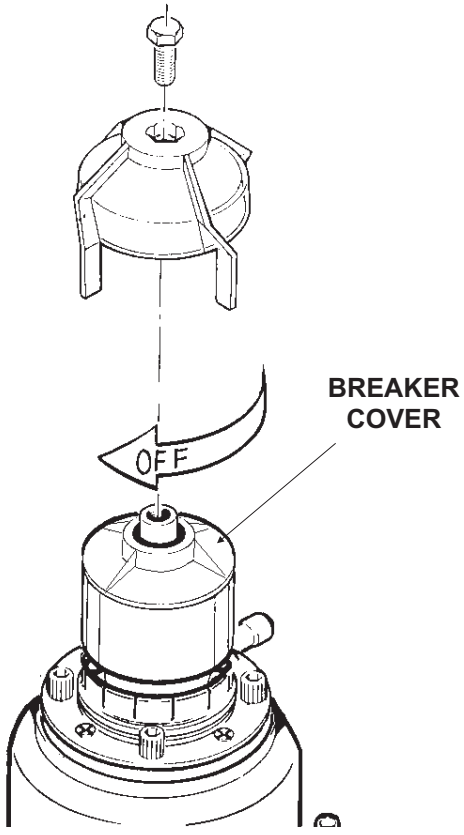
Switch off electrical power, and shut off the water supply.

For more information on removal of these parts, see REMOVAL AND REPLACEMENT.

1. To remove the auger, remove front and top panel. See Removal And Replacement.
2. Push bail clamp back and remove ice chute cover.
3. Unscrew and remove ice sweep.
4. Remove ice chute from evaporator.
5. Remove 4 allen head screws holding breaker to evaporator.
6. Pull up on breaker to remove auger.

Allow the auger to dry, the stainless steel of the auger and evaporator must be clean and bright. Clean the auger and evaporator as required. DO NOT HONE THE EVAPORATOR.

7. Replace the water seal.
8. Reverse to reassemble.



Symptom	Possible Cause	Probable Correction
No ice is made, nothing operates	Unit off due to no power.	Restore power
	Unit off due to master switch in Off position	Move master switch to ON
	Unit off due to low water level in reservoir	Check water supply, filter and float valve.
	Unit off due to ice level sensors (photo-electric eyes) blocked	Check/clean ice level sensors
	Unit off due to scale on water level sensor	Clean water level sensor
	Auger motor hums but does not turn	Auger can't turn. Circuit board has not yet shut unit down.
	Auger turning but there is no refrigeration effect	Liquid line valve not opening, check coil, check board relay.
		No refrigerant to ice machine, check main system.
	Unit is shut down	Circuit board has shut ice machine down due to high auger motor amp draw. Check for cause of high amp draw, including bearings, gear motor condition and scale on auger & evaporator. May also be due to liquid line valve leak thru during the off cycle. Check valve.
	Auger not turning	Due to: motor failure; auger relay failure on circuit board; or gears stripped. Check drive train.
	Low suction pressure	Liquid line valve not opening due to coil failure or failure of compressor relay on circuit board
		EPR setting too low, check/adjust
		TXV restricted or not metering. Check bulb temperature.
	No power to circuit board	Check harness
	Circuit board gear motor relay will not close	Check / replace board
	Water level or ice level sensor failed	Check / replace sensor
No ice, auger motor is turning	Liquid line valve coil is open	Check / replace valve coil
	Circuit board relay will not close	Check / replace board
Unit makes ice, but very slowly	High discharge pressure because of dirty condenser	Clean condenser.
	Auger and evaporator are coated with minerals	Clean the water system
	Low suction pressure due to low EPR setting	Adjust EPR, check TXV superheat

SERVICE DIAGNOSIS

Symptom	Possible Cause	Probable Correction
Water Leak	Drain plugged up	Clean out drain
	Tubing cracked	Replace tubing
	Condensation on drain tubing	Insulate tubing
	Hose off	Reattach hose
	Reservoir cover off	Return cover to reservoir
	Reservoir cracked	Replace reservoir
	Evaporator water seal leaks	Check base of evaporator & drip pan. If the seal leaks, shut off the water, remove the auger, replace the water seal. Check gear motor for water infiltration.
Uses too much water	Reservoir float valve leaks thru	Replace float valve or seat
Excessive ice meltage	Bin drain clogged	Clean out bin drain.
	Improper installation of drains, they are connected.	Drains must be separate.
	Poor fit between bin door and door frame	Adjust or replace
Machine makes too much noise	Evaporator coated internally with minerals	Clean with Ice Machine Cleaner
	Motor bearings dry	Oil or replace motor

CONTROL SYSTEM DIAGNOSTICS

The control system consists of:

- Control Board
- Water Sensor
- Ice Sensors

If the unit is OFF, check the **control board:**

1. Is the Power OK light on? If not check power to the unit. If it has power, and the Power OK light is NOT on, check the high pressure and low pressure cut outs. If they are both closed, replace the board. If the Power OK light is ON, go to the next step.

2. Is the Water OK light on? If it is, go to the next step. If not, check the water level in the reservoir. If there is water in the reservoir, check that the water sensor is plugged in. To check the **water sensor:**

A. Unplug water sensor.

B. Pull water sensor from reservoir.

C. Place one ohmmeter lead on the sensor's plug and the other on the sensor's tip. The meter should show nearly zero resistance. If it reads infinite resistance, check the tip for corrosion. If it is clean and still reads open, replace the sensor.

OR connect a copper wire to the wire where the water sensor plugs into and place the other end in the water. The water OK light should go ON. If it does not, replace the control board.

3. **Ice sensor check.** Is the Bin Full light Off? If it is OFF and the Service light is Off, and the unit is not running, replace the control board.

If it is OFF and the auger motor is running but the compressor is not, check the compressor contactor coil.

If it is on, the ice sensors may be blocked. Remove them and check for mineral scale. Scotsman's test box can also be used to determine if the ice sensors or board are defective.

Using the tester:

A. Disconnect the ice sensors at the connection by the ice chute. Connect the LED and PHOTO TRANS wires to the control board's wires.

B. With the On - Off (mode) switch in either position, move the Bin Full switch on the tester to Bin Full - the tester's light will blink and after a few seconds the bin full light on the control board will come on. If not, replace the board.

Move the Bin switch on the tester to Bin Empty. The light on the tester will go out, and after a few seconds the Bin Full light on the board will go out. If master switch is ON, the unit should start.

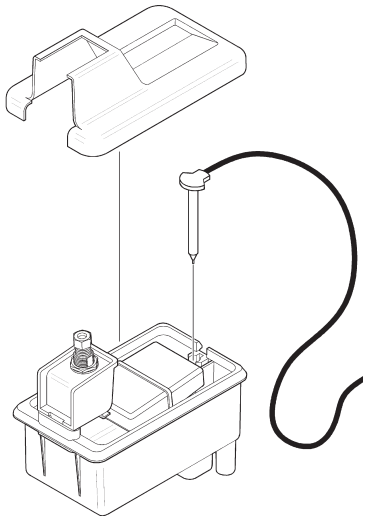
REMOVAL AND REPLACEMENT

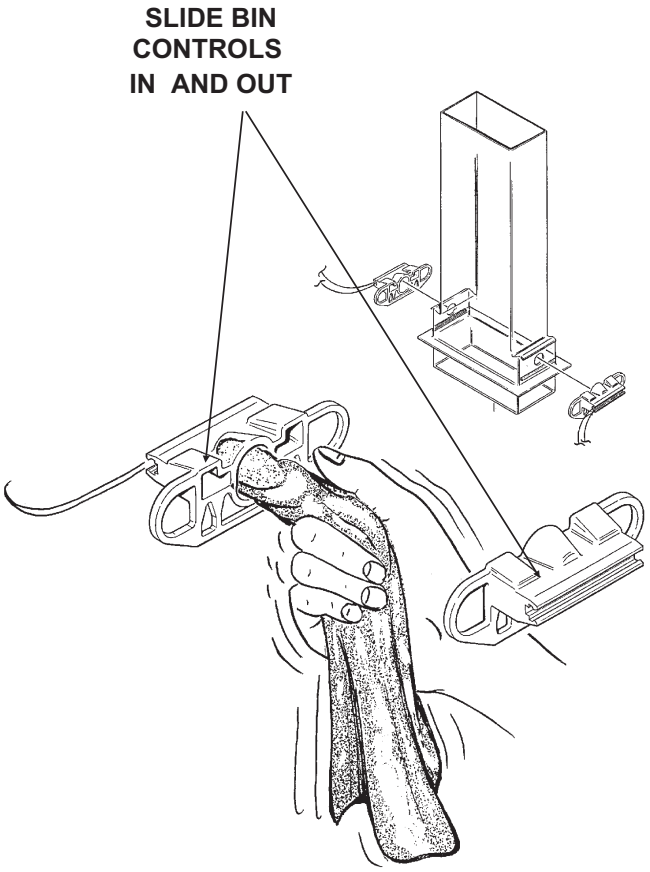
WATER RESERVOIR

1. Shut off the water supply to the ice maker.
2. Remove front panel and reservoir cover.
3. To remove float only, disconnect water inlet tube, push in the tab behind the reservoir and pull valve assembly out of the reservoir tank.
4. To remove reservoir, disconnect water inlet compression fitting at reservoir inlet.
5. Remove drain hose from reservoir.
6. Remove evaporator inlet hose from reservoir.
7. Remove mounting screws from reservoir bracket, and remove reservoir from ice maker.
8. Reverse to reassemble.

BIN CONTROLS (Ice Level Sensors)

1. Disconnect electrical power.
2. Remove front panel.
3. Remove control box cover.
4. Locate ice chute, at the base of the chute, in front of and behind it are two plastic bin control mounts.
5. Slide each bin control to the left, and in the control box, disconnect the electrical leads connecting the bin control to the circuit board.
6. Reverse to reassemble, be certain that the bin controls are aligned so that the ice level sensors are visible (centered) through the holes in the cube chute.





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REMOVAL AND REPLACEMENT: Bearing And Breaker

Note: Removal of the auger, water seal, evaporator and gearmotor must begin at the top of the assembly.

To Remove the Breaker Bearing Assembly:

⚠WARNING

Electrical Shock Hazard

Electrical shock can cause personal injury. Disconnect electrical power before beginning.

1. Remove panels and disconnect electrical power.
2. Push back bail clamp, remove insulation retaining strap and insulation, remove ice chute cover.
3. Unscrew and remove ice sweep.
4. Lift up and remove ice chute.
5. The breaker may be removed from the auger and evaporator without disturbing the auger.
   a. Unscrew breaker cover from breaker (left hand threads)
   b. Unscrew auger stud from top of auger.
   c. Unscrew 4 allen head cap screws holding breaker to evaporator.
   d. Lift up, and remove breaker/bearing assembly from auger & evaporator.
6. Service the bearing. Check for rust, rough spots and damage.
   a. The bearing is pressed into the breaker, to remove the bearing and replace it an arbor press is needed.
   b. Replace lower seals before installing new bearing in breaker.

Note: seals must be pressed in with a tool pushing against the outer edge only, they will not install by hand.

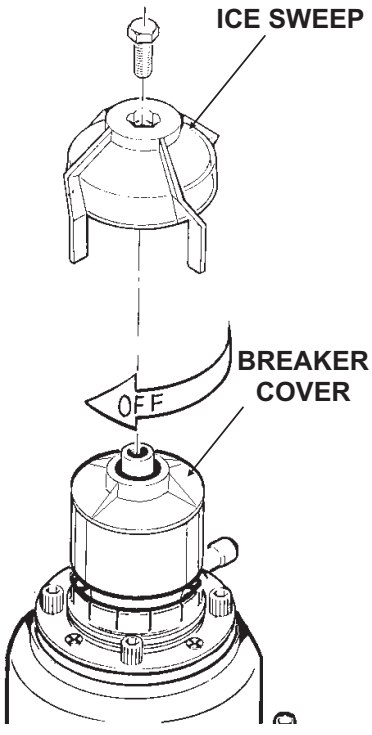
Replace parts as required. Re-grease bearing with Ice-O-Matic part no. 6051062-01 bearing grease. Replace top seal, and check the o-rings, replace if cut or torn.

7. Reverse to reassemble: specific tools and materials are required to install properly.

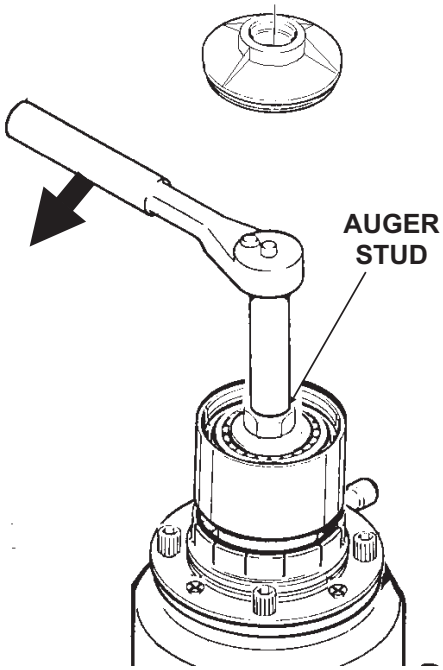
a. Add food grade grease such as Ice-O-Matic part number 6051036-01 to the seal area before installing on the auger.

b. Check the seal to shaft areas for cuts, or rough spots: none are permitted.

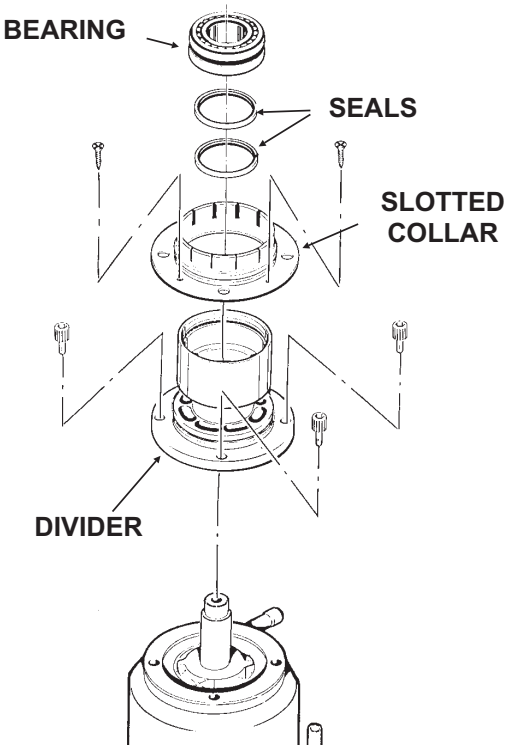
Step 5- a



Step 5-b



Step 5-c and Step 6



REMOVAL AND REPLACEMENT

To Remove the Auger:

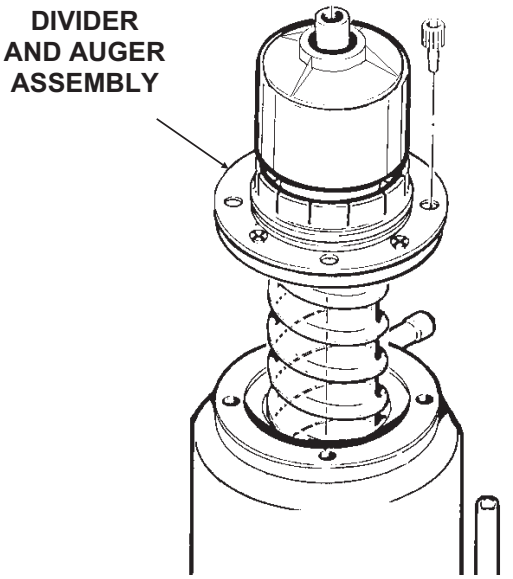
Turn off the water to the machine, and unclip the evaporator drain hose, pull it down and drain the evaporator into the bin or a container.

	⚠WARNING
⚠WARNING	**Moving Parts Hazard** Moving parts can cause personal injury. Disconnect electrical power before beginning.

1. The top panel must be removed.
2. Remove ice chute cover.
3. Unscrew ice sweep.
4. Remove ice chute body.
5. The auger and breaker/bearing may now be removed as an assembly.

a. Unscrew 4 allen head cap screws holding breaker to evaporator.

b. Lift up on breaker and remove auger from evaporator.



Note: If the auger is stuck, the breaker must be removed from the auger.

The breaker may be removed from the auger and evaporator without disturbing the auger.

a. Use spanner wrench and unscrew breaker cover from breaker (left hand threads)

b. Unscrew auger stud from top of auger.

c. Unscrew 4 allen head cap screws holding breaker to evaporator.

d. Lift up and remove breaker from evaporator.

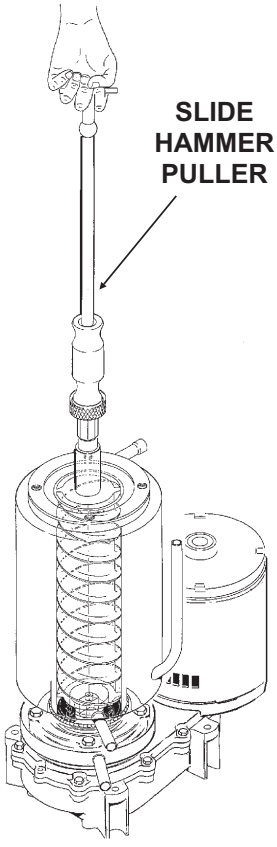
e. If the auger is stuck use a slide hammer type puller to pull on the auger at the threaded hole. The size of that hole is 5/8"-18.

Inspect the auger, the critical areas of the auger are:

1. The auger body. It should be clean and shining. Sometimes an auger will appear clean when wet, but after it is dry it will be seen to be stained. Scrub the auger with ice machine cleaner and hot water.

Ice machine cleaner is an acid. Handle it with extreme care, keep out of the reach of children.

2. The water seal area. Because the auger has been removed, the water seal will have to be replaced. Remove the water seal top half from the auger, and inspect the auger for minerals clean as required.

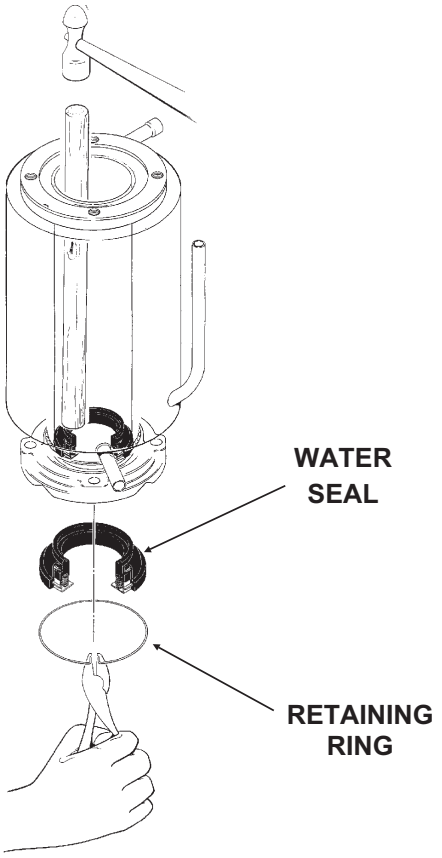


	⚠WARNING
⚠WARNING	**Moving Parts Hazard.** Moving parts can cause personal injury. Disconnect electrical power before beginning.

To Remove the Water Seal:

(Assuming all steps to remove the auger have been performed.)

1. The gearmotor/evaporator assembly will have to be exposed.
2. Remove the 4 hex head cap screws holding the evaporator to the gearmotor assembly. Lift the evaporator up and off of the gearmotor.
3. Remove the snap ring or wire retainer from the grove under the water seal.
4. Pull or drive out the lower half of the water seal.



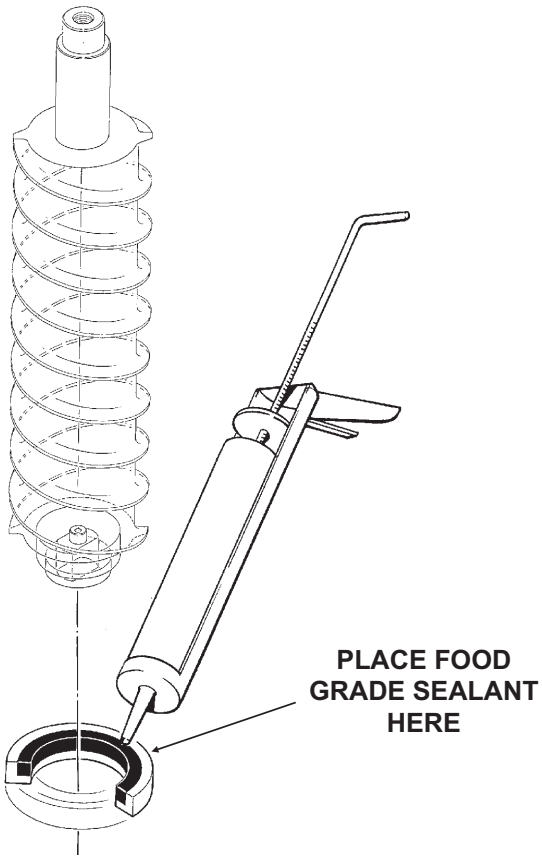
To Replace the Water Seal:

1. Lubricate the water seal with water, and push the water seal into the bottom of the evaporator slightly past the grove for the snap ring.
2. Replace the snap ring and pull the water seal down against it.
3. The part of the water seal that rotates with the auger must also be replaced. Remove the old part from the auger and clean the mounting area.
4. Place a small bead of food grade silastic sealant (such as 732 RTV) on the area of the auger where the water seal is to be mounted.
5. Carefully push the water seal (rubber side against the auger shoulder and the silastic.)

CAUTION

Do not get any silastic onto the face of the seal.

6. Allow the auger and seal to air dry until the silastic is dry on the surface.
7. If the original water seal was leaking, it would be a good idea to inspect the interior of the gearmotor.



REMOVAL AND REPLACEMENT: Evaporator

To Replace the Evaporator:

(Assuming all the steps for removal of the thrust bearing, breaker, auger, and water seal have been performed.)

1. Shut the hand valves in the liquid and suction lines to the evaporator being serviced; then discharge the refrigerant.
2. Unsweat the refrigerant connections:

a) At the thermostatic expansion valve outlet.

CAUTION

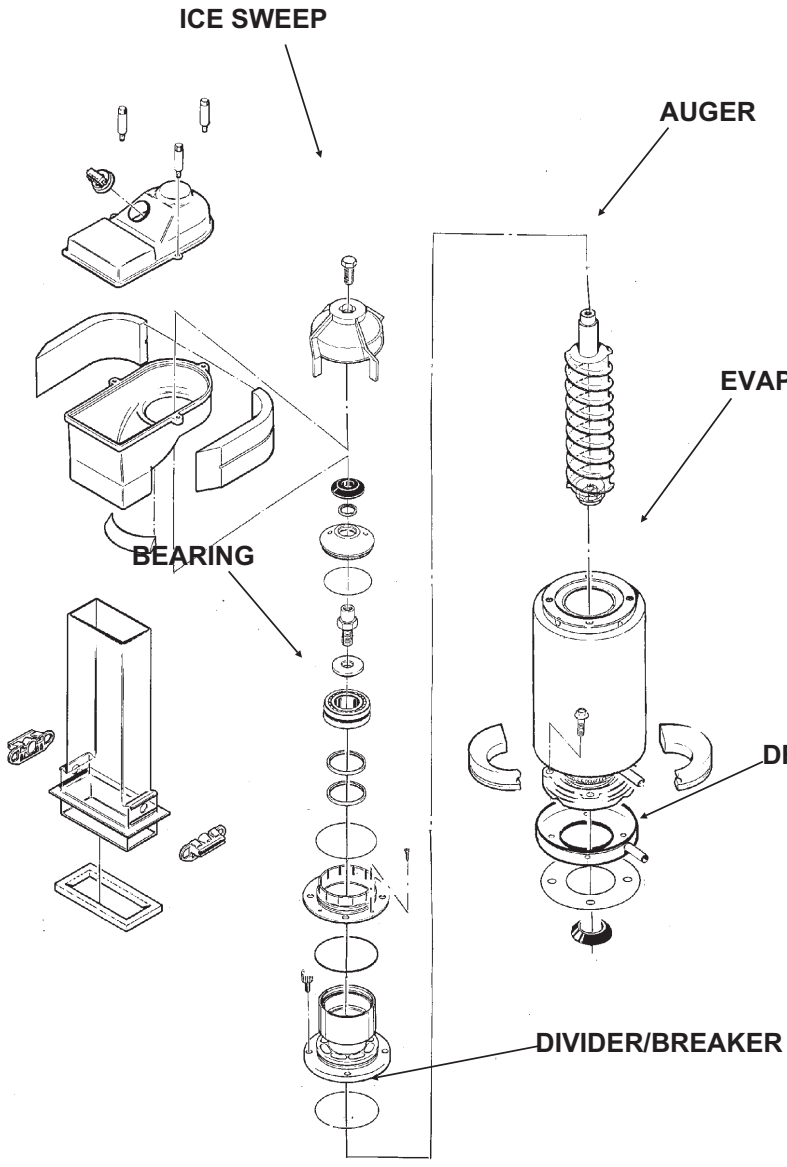
Heat sink the TXV body when unsweating or resweating the adjacent tubing.

b) At the suction line at the joint about 3" from the evaporator.

3. Remove the evaporator.
4. Unsweat the drier from the liquid line.
5. After installing a new water seal in the new evaporator (see “To Replace the Water Seal”) sweat in the new evaporator at the old connections.
6. Install an new drier in the liquid line.
7. Evacuate the system until dehydrated, then weigh in the nameplate charge. Check for leaks.
8. Install auger, breaker, breaker bearing assembly, and ice discharge chute in reverse order of disassembly. See “To Reassemble Evaporator and Auger”

To Reassemble the Evaporator and Auger

1. After the gearmotor has been inspected, fasten the evaporator to the gear motor, torque the bolts to 110 inch pounds.
2. Lower the auger into the evaporator barrel, slightly turning it to match up with the drive end. Do Not Drop Into the Evaporator.
3. Complete the reassembly by reversing the disassembly for the breaker & thrust bearing assembly.



REMOVAL AND REPLACEMENT: Gearmotor

To Remove and Repair the Gearmotor Assembly:

(Assuming that the procedures through removal of the water seal have been performed.)

1. Remove the electrical wires from the gear drive motor.

2. Unscrew the 4 cap screws holding the gearmotor to the gearmotor plate.

3. Remove the gearmotor from the ice maker.

To Inspect the gearmotor.

A) Remove the cap screws holding the gearmotor case halves together and pry the two cases apart.

B) To lift off the cover, lift up until you can feel internal contact, then pull the cover towards the output gear end, and then lift the cover (with drive motor attached) up and away from the gear motor case.

Note: The case cover output gear, bearings, and shaft are one pressed together assembly. Replace as a unit.

C) Inspect the oil, gears, and bearings. If the oil level and condition is acceptable, quickly check the gears and bearings. They are likely to be fine if the oil is.

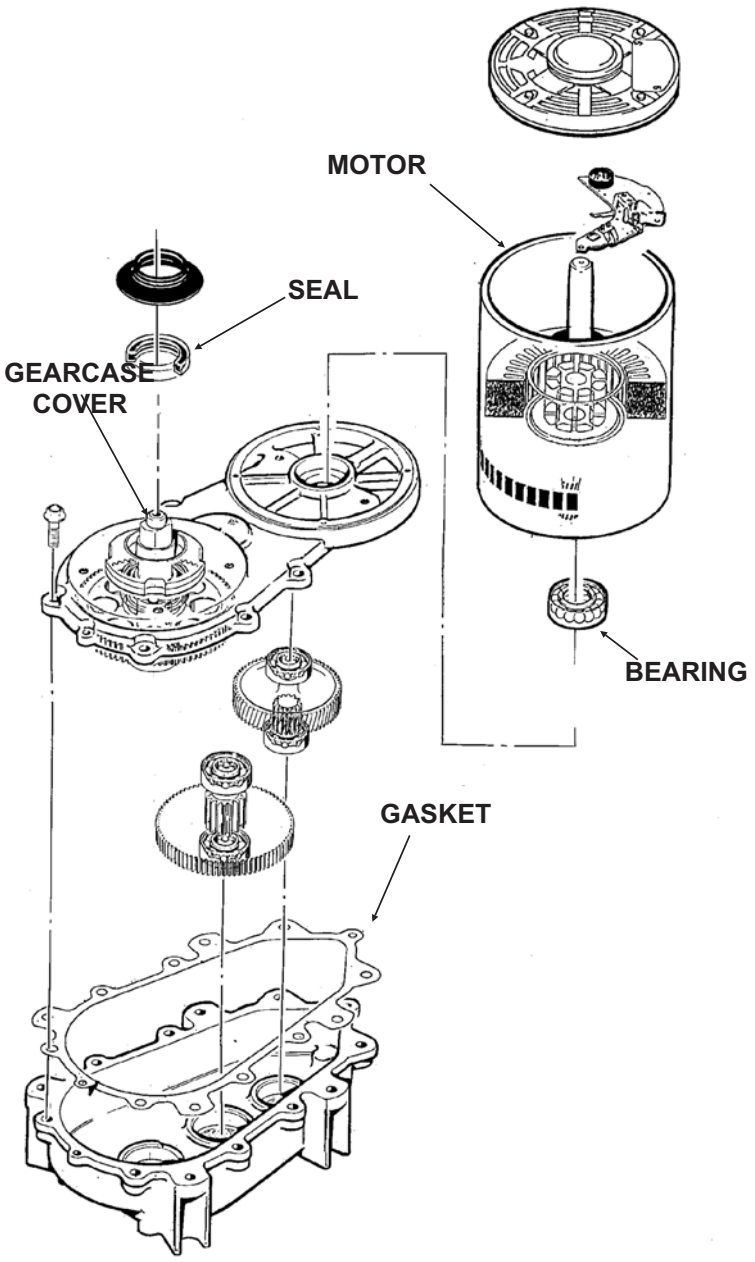
If there is evidence of water in the oil (rusty bearings and gears; the oil having a creamy white appearance; oil level too high) carefully inspect the bearings and gears. If in doubt about the condition of a part, replace it. The oil quantity is 14 fluid ounces, do not overfill.

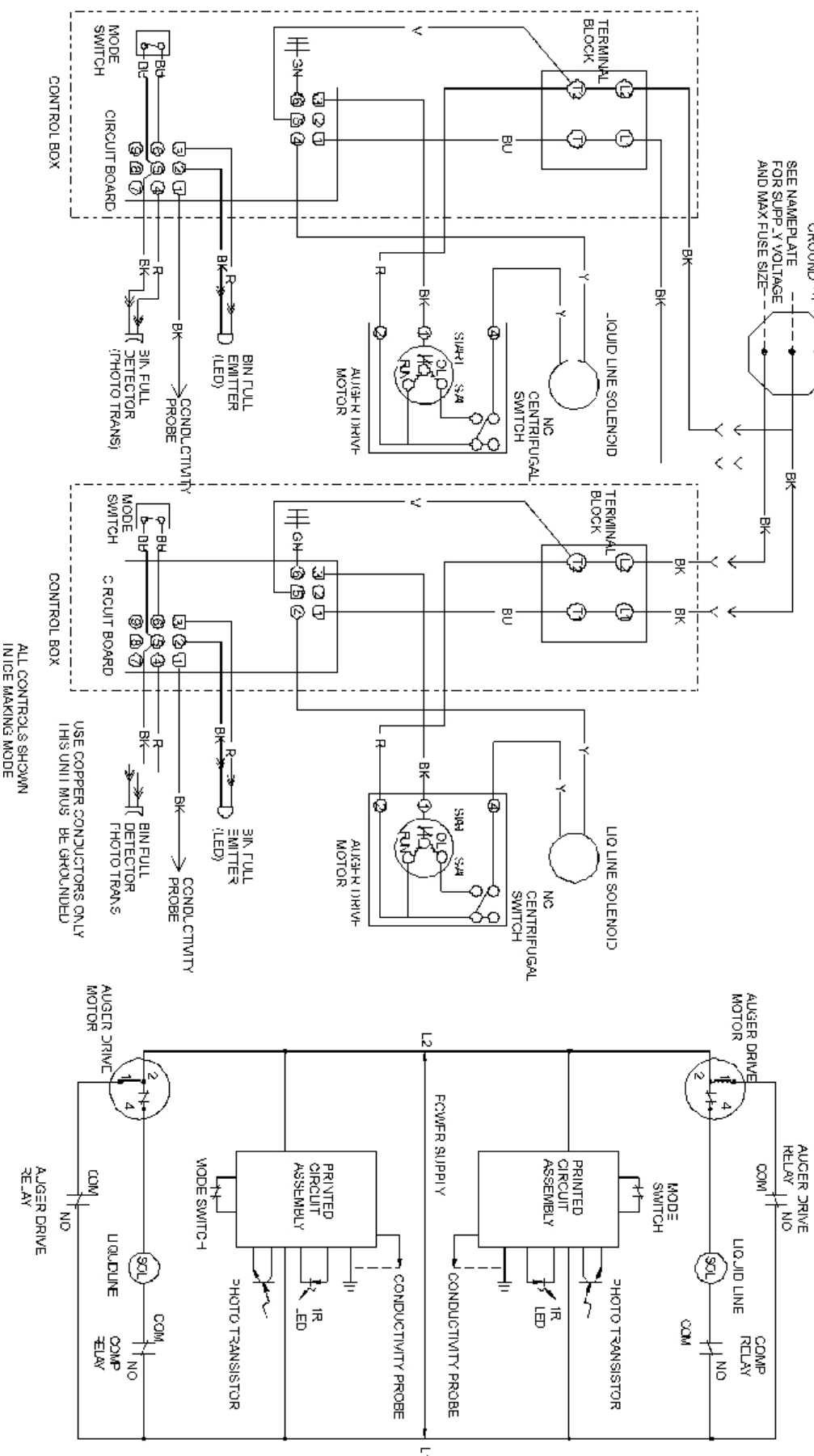
Note: The gears and bearings are available only as pressed together sets.

D) After replacing parts as required, (if any) reassemble the gearcase. The two smaller gears and the oil should be in the lower case, the output gear will be with the cover. As you lower the cover onto the lower case, cover will have to be moved closer to the second gear after the output gear has cleared the second gear top bearing.

E) After the case is together, and the locating pins are secure in both ends, replace all cap screws.

4. Bench test the gearmotor, check for oil leaks, noise, and amp draw.




CONTROL BOX
MODE SWITCH
CIRCUIT BOARD
TERMINAL BLOCK
EARTH GROUND
SEE NAMEPLATE FOR SUPPLY VOLTAGE AND MAX FUSE SIZE
JUNCTION BOX
LIQUID LINE SOLENOID
NC CENTRIFUGAL SWITCH
AUGER DRIVE MOTOR
BIN FULL EMITTER (LED)
BIN FULL DETECTOR (PHOTO TRANS)
CONDUCTIVITY PROBE
ALL CONTROLS SHOWN IN ICE MAKING MODE
USE COPPER CONDUCTORS ONLY
THIS UNIT MUST BE GROUNDED
AUGER DRIVE RELAY
COMP RELAY
PRINTED CIRCUIT ASSEMBLY
PHOTO TRANSISTOR
IR LED
CONDUCTIVITY PROBE
POWER SUPPLY
L1
L2

Service History

Model Number_____**Serial Number**_____**Date Installed**_____